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Wexler et al.

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[54] **DOUBLE-SIDED AUTOMATIC TEST EQUIPMENT PROBE CLAMSHELL WITH VACUUM-ACTUATED BOTTOM PROBE CONTACTS AND MECHANICAL-ACTUATED TOP PROBE CONTACTS**

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[51] Int. Cl.⁶ **G01R 31/02; G01R 1/073**

[52] U.S. Cl. **324/754; 324/761**

[58] Field of Search **324/158 P, 158 F, 72.5,**
324/754, 761

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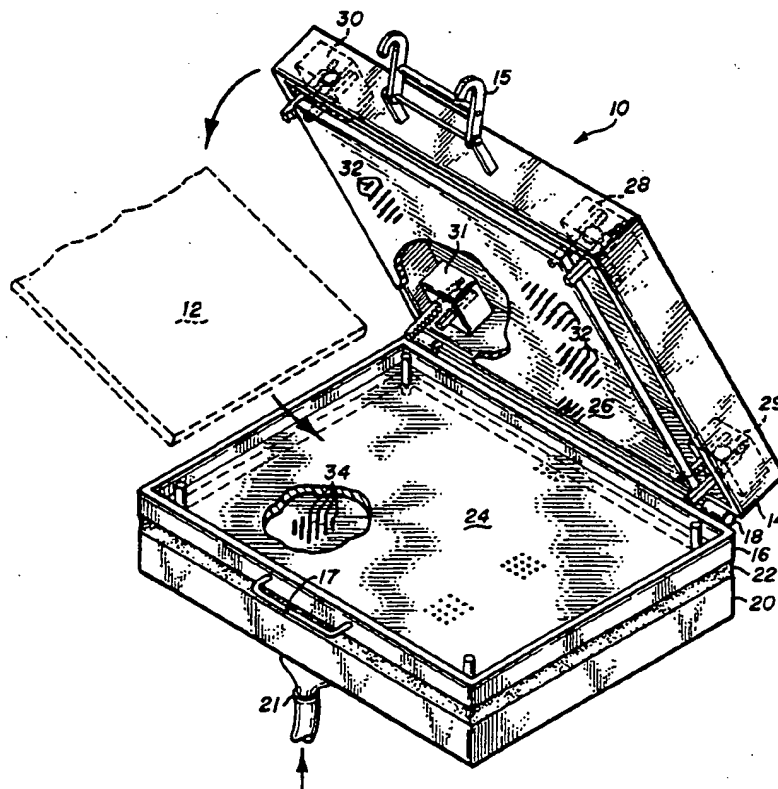
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[57] **ABSTRACT**

A two-sided probe and clamshell fixture embodiment of the present invention comprises a vacuum-actuated bed-of-nails for probing the bottom side of a printed circuit board (PCB) device-under-test (DUT) and a pushrod-actuated bed-of-nails for probing the top side of the printed circuit board device-under-test. The fixture comprises a base, a bottom frame, and a bottom plate that are sealed for vacuum actuation by a gasket. When in place, the DUT completes the vacuum seal and the bottom bed-of-nails which includes a patterned array of spring loaded probe pins reaches through the bottom plate to contact probe points on the DUT. A set of push rods attached to the base push out through the bottom frame and operate a set of gear boxes attached to the outer edges of a top plate within a top frame. A patterned array of spring-loaded probe pins reaches through the top plate to contact probe points on the topside of DUT when a vacuum applied to the bottom assembly causes the pushrods to advance and operate the gear boxes. The gear boxes reverse the direction of force received to cause the topside pushrod-actuated bed-of-nails to engage the DUT.

6 Claims, 3 Drawing Sheets**BEST AVAILABLE COPY**